



CLASSROOM INNOVATION IN MATHEMATICS GRANT 2010-11

OVERVIEW

Purpose: From 2005 to 2009, state scores in mathematics were stagnant, rising only one percentage point over the four-year span. At the state level, IDOE is currently exploring new, innovative classroom strategies that will help to push mathematics in Indiana forward. One such strategy is the integration of digital curriculum and technology into traditional teaching methodologies.

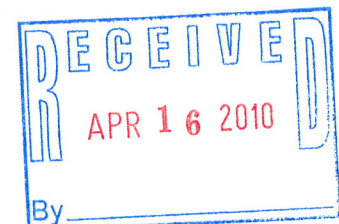
The purpose of the program is to provide a select number of LEAs with the opportunity to use digital mathematics curricula, technology-based instruction, and interactive white boards in lieu of traditional textbooks. This grant provides an opportunity for LEAs to pilot digital curriculum which can be readily aligned to changes in standards and to determine its effectiveness with their student populations and within their contexts. Following the grant, LEAs will either continue the use of digital curriculum through their textbook rental program or discontinue use of the digital curriculum and seek an alternative for curricular materials. Digital curriculum would need to utilize innovative strategies for instruction and represent a significant break from the traditional textbook-oriented instruction and be approved by the IDOE, but it would not serve as a standalone, online course that replaces the classroom teacher. In order to evaluate the effectiveness of these strategies, awards will be limited to schools that propose plans for either: 6th Grade, 7th Grade, 8th Grade, and/or Algebra I. The results of this pilot program will be used to evaluate the effectiveness of digital curriculum and provide data for schools that may look at adopting digital mathematics curricula in the future.

This grant program is funded through the David C. Ford Fund.

Application: Please fill out each part completely. For assistance, you may contact Zach Foughty at zfoughty@doe.in.gov or Phone: (317) 233-5019

I. GENERAL INFORMATION

1. Corp # 7365	2. Corp Name Shelbyville Central Schools	
3. Corp Address (Street, City, State, Zip) 803 St. Joseph Street Shelbyville, IN 46174		4. Telephone 317-392-2505
5. Contact Person's Name Mary Harper, Assistant Superintendent		6. Contact Person's Email Address meharper@shelbycs.k12.in.us
7. Contact Person's Address (Street, City, State, Zip) 803 St. Joseph Street Shelbyville, IN 46176		8. Contact Person's Telephone Office: 317-392-2505 Cell: 317-364-5232
9. Superintendent's Name David Adams		10. Superintendent's Email Address daadams@shelbycs.k12.in.us
11. # of Schools Participating 2	12. # of Students Being Served 1175	13. # of Teachers Participating 14





II. Project Abstract

Briefly describe the proposed project clearly and concisely using the space provided.

Critical learning needs for students in grades 6 through Algebra I will be addressed if awarded the Classroom Innovation in Mathematics Grant. Data from Acuity, ISTEP, and the Algebra I End of Course Assessment indicates that our current instructional methodology is not adequately preparing our students in the procedural skills and in-depth understanding of mathematics. Identified student learning needs include the ability to:

- Master mathematical content,
- Think strategically,
- Persevere in solving mathematical problems while applying a variety of strategies and tools.

The promise of digital curriculum and its benefits to classroom instruction will serve as a catalyst for redefining our mathematics programs and instructional delivery to better meet the needs of our students. The daily integration of technology increases student engagement while enhancing the differentiation from remediation to accelerated enrichment.

Through the thorough analysis of Indiana 2009 Math Standards and the Common Core Standards, Shelbyville Central Schools has postponed the textbook adoption. The use of digital curriculum as an alternative to traditional instructional delivery has been embraced by many of our teachers at both the elementary and secondary levels. A corporation commitment for all students to experience technology rich learning environments has been two fold. First, to eliminate barriers, a plan to install multimedia presentation stations for all core area teachers was developed. All middle and high school mathematics teachers have multimedia presentation stations in their classrooms. A partnership with IUPUI allowed for extensive and ongoing professional development to teach and inspire educators to foster innovative thinking and tailor instruction through the use of technology. Currently, teachers at the middle and



high schools are piloting ALEKS with a few classes and have acknowledged the benefits to students.

This grant would bring our commitment to the next level by instituting the following:

Project Description

- All mathematics teachers math classes from grades 6 to Algebra I will use digital curriculum and tools to support whole group and individual instruction. To meet this goal, ALEKS in addition to other online digital resources would allow teachers to provide engaging and interactive instruction while customizing learning opportunities to meet the students' needs.
- All mathematic teachers at the middle and high schools will participate in ongoing professional development and collaboration meetings to learn and share research based, best practices for utilizing technology.
- The use of student Mobis and a teacher Mobi will enhance student interactivity with digital resources during class time. The Mobis were selected because they provide the flexibility to use for whole group, small group and individual instruction.
- Increase our capacity to utilize student data to evaluate curriculum and drive instruction through the use of ALEKS and expansion of Acuity Algebra I assessment to high school Algebra I students.

Objectives and Learning Outcomes:

For Students:

We adopted Dr. Tony Bennett's vision as it relates to student outcomes.

- (90-25-90) 90% of the students in grades 6-Algebra I will pass the ISTEP and End of Course Assessment. We believe differentiating our approach to delivering Algebra I will assist in the goal to have 90% of our students graduate.
- (Growth Model) 100% of the students in grades 6-Algebra I will demonstrate a minimum



of one year's growth in mathematic performance.

- (Closing the Gaps) There will be a 5% growth in overall student performance with 8% growth in all AYP subgroups. Through ALEKS, principals will create AYP groupings of students to enable efficient and timely data on student performance.
- (21st Century Skills) 100% of the students will develop 21st century skills through the use of collaborative technologies such as ALEKS, Moodle, Wikispaces, eBoard, and Mobis.

For Educators:

100% of mathematics teachers will:

- Deliver 80% of instruction through digital curriculum, online technologies or computer based instruction. To ensure and monitor the fidelity of the instruction, we will scaffold professional development and build in ongoing data points for teachers, principals, and district administrators to analyze ALEKS reports. Student progress, duration of log in sessions by student and class will assist in instructional fidelity. Student, class, school, and district progress toward the state standards will be evaluated quarterly.
- Utilize data from ALEKS and Acuity to drive instruction as measured by data meetings' outcomes.
- Employ appropriate technologies and instructional strategies to develop students' deeper understanding of core subject material and 21st century skills.
- Integrate interactive technology as a standard part of instruction.
- Develop online resources so students have 24-hour access through the use of existing systems resources such as Moodle, teacher websites, eBoard or Wikispaces.



Rationale

Shelbyville Central Schools' commitment to the 90-25-90 has been demonstrated in several ways:

- This is our second year for administering Acuity. Our middle school carefully analyzes Acuity data to provide intensive, individualized remediation. All math teachers utilize the instructional tools and custom tests to differentiate instruction.
- Two year trend data from the Acuity Predictive Assessments are used three times a year to evaluate curriculum gaps and instructional practices.
- To better prepare our students for the 21st century global economy, the incorporation of technology and inquiry have been corporation initiatives. Some of our current partnerships include: IUPUI-Through ongoing teacher workshops, the goals are to focus on students' needs while increasing the teachers' abilities to integrate technology to improve academic standards and student achievement. Purdue-Through Shared Inquiry workshops, teachers have learned to integrate the inquiry approach into mathematics and science. University of Notre Dame- Through the Indiana AP Teaching Incentive Program more students will be prepared to be successful in college academic coursework.
- Response-to-Intervention Models have been developed at all levels with ongoing data meetings to evaluate over all school performance as well as meeting the individual needs to students.
- Though unable to implement whole school digital curriculum, both the middle and high schools have piloted small groups ALEKS, APEX Learning, Nova Net, and Compass Learning.

Our teachers and administrators are excited and ready to provide the highest quality mathematics instruction through the use of digital curriculum and best practices. With math adoptions on hold, this



grant would allow our educators the perfect opportunity to explore the benefits of digital curriculum while providing the knowledge base to make informed decisions regarding both math and science adoptions next year. After many meetings with all the different stakeholders, we are confident our students will see an increase in math performance. If given the opportunity to have 100% of our secondary math teachers deliver 80% of instruction through digital curriculum, we would be happy to be a site base for other corporations that are eager to learn the benefits of how technology can transform a classroom.



Please complete one grant narrative for your LEA which includes all schools. Narratives should be double spaced, 12pt Times New Roman font, and not to exceed 10 pages.

III. GRANT NARRATIVE

Software Choice and Rationale: Identify the digital content program you have selected. Describe how this program aligns with the purpose of the grant. Describe how this program will address the instructional needs of your students and teachers.

ALEKS ALIGNS WITH GRANT PURPOSE

ALEKS was selected as our software because it would best meet the diverse instructional needs of our students. It is a research-based online math program that is aligned to state standards. In order to increase student achievement in mathematics, curriculum and instruction must include opportunities for engaging and innovative direct instruction, meaningful practice, application, and immediate evaluation of student progress. We believe that ALEKS provides all of these components.

INSTRUCTIONAL NEEDS OF STUDENTS AND TEACHERS

Through mini pilots with middle and high school students, student input and data indicates that students positively respond to ALEKS. The student's work on the "pie" is motivating and aligned to meet the individual needs of the student. Piloting teachers are easily able to ascertain which content areas were mastered by students and which need to be addressed in whole or small group instruction. The concept of flexible, small group instruction at the secondary level was easily realized through the use of ALEKS. This tool also provides the acceleration and documentation of what students have accomplished. The Learning Rates settings of "Below Goal", "On Goal" and "Above Goal" lets students and parents easily monitor progress. ALEKS meets the instructional needs of students and teachers through the following research based components:

- Artificial intelligence Targets Gaps in Individual Student Knowledge
- Assessment and Learning with Standard-Based Content for Grades 3-12. (This was an important factor since some of our middle school students are working one to two years



below grade level.)

- Comprehensive and Customizable Curriculum That Aligns with Course Syllabi
- Monitor Student, Class, School, and District Progress Toward State Standards
- Unlimited Online Access-PC and Mac Compatible
- Spanish Version Available

Our corporation's student population has diverse demographics. Over 50% of our secondary students qualify for free and reduced lunch. Our English Language Learners population, now at 9%, has been on a steady incline for the last few years. Approximately 18% of our students are eligible for special education services with over 23% taking high ability courses. ALEKS differentiates learning opportunities to meet the instructional needs of all the students. Teachers and administrators can quickly access the comprehensive progress report to ascertain what the student knows, is ready to learn, and the progress made in the system. This alignment to standards facilitates teachers in data driven and student centered instruction.

To closely monitor our at risk students, data walls will be developed at both the middle and high school to assess student progress regularly. Students not demonstrating adequate progress will be addressed through the Response to Intervention process. Administrators will meet with teachers of at risk students not demonstrating progress to review student performance data and create an action learning plan.

As we move forward with providing students more online digital resources for anytime, anywhere access, we needed to identify how many students had internet access outside of school so we could address the students' needs. The district wide survey results indicated that 92.6% of our high school students and 89.4% of our middle school students have computers in the home. But over half of the students who reported they do not have internet access at home state they have internet access in



another location. Additionally, Shelbyville High School and Shelbyville Middle School will provide after-school internet access in computer labs to assist in extending their opportunities to access the digital curriculum. Student choosing to take advantage to after school internet access may utilize the extra curricular bus transportation.

Professional Development: Describe the PD needs of your teacher for using interactive whiteboards and implementing digital curriculum and detail the specific plan for meeting those needs.

In order to see significant and sustainable changes in instruction, we believe that the impactful professional development requires ongoing and site based learning. Math teachers will participate in approximately 37 hours of training and coaching over the course of the year. Like students, we understand that professional development will need to be differentiated based on the teacher's experience with using digital curriculum, interactive white boards, and other technology resources to promote learning. To achieve this differentiation and provide appropriate support, surveys will be given to each teacher to ascertain levels of technology literacy and learning needs. A professional development plan will be created based on survey results. The professional development plan will include:

- Three-day onsite summer training with IUPUI. Few of the topics include Bridging the Digital Divide Between Students and Teachers; Supporting Student Learning in the 21st Century; Exploring the Technology Toolbox; and Using Technology to Access Learning
- One day seminar on how to utilize collaborative technologies such as the Mobis to enhance student learning
- One day overview on ALEKS
- Half day personal coaching session after 9 weeks of implementation addressing classroom reports and questions about ALEKS. Building level administrators will attend a coaching session for each teacher each semester



- Ongoing early release Wednesday professional development time to collaborate in grade level and cross grade level groups
- Quarterly data meeting with building level administrators and teachers as well as quarterly meetings with district level administrators and principals
- In class support from our corporation's technology integration specialist to provide ongoing and on time support as teachers utilize collaborative technology in the classroom

Through the professional development series, teachers will feel comfortable utilizing technology to enhance and modify instruction. Teachers will use the same collaborative tools to develop online "spaces" to share successes and ideas. This process will be facilitated by our technology integration specialist. In addition to addressing instructional design issues, instructional strategies, data analysis, and planning techniques, teachers will learn about the modern trends and research that support the integration of computer technology in the classroom.

Implementation Plan – Digital Content: Describe your plan for monitoring the implementation of the digital content with fidelity to program guidelines.

The monitoring of implementation will be two fold. First, data will be used to evaluate the implementation progress. ALEKS provides teachers and administrators with detailed information on student progress including last login, duration of all sessions, individual progress and class performance. Acuity data will illustrate student, classroom, grade level and school performance levels. This will be closely analyzed after each Acuity Predictive, Algebra I formative assessments and proficiency test. Algebra I ECA data will be evaluated after each assessment window. Data wall analysis of at risk population will take place quarterly. Instructional walk-throughs using eWalk will be reviewed at the end of each semester with special attention to data trends with math teachers using technology. (Looking for the 80% benchmark) Secondly, discussions, team meetings, and coaching sessions throughout the year will provide the support and guidance for teachers based on their



determined level of need. Quarterly meetings will include math teachers, principals, and assistant superintendent. Through the pilots this year, we were impressed with the ALEKS program as well as the outstanding customer support for the teachers and principals.

Implementation Plan – Interactive Whiteboards: Outline your current inventory of interactive whiteboards, how you can realign current inventory to meet program goals of one interactive whiteboard per classroom mathematics teacher, and what funds you would apply for in order to address these gaps.

The middle and high schools have one interactive SMART board which will be placed in one of the math teacher's classrooms. All math teachers have multimedia presentation systems currently installed in their classrooms. Utilizing the grant funds, Mobi systems which will include 5 student Mobis, 1 teacher Mobi and a docking station will be placed in mathematic classrooms. In terms of our other technology resources, we will move 3 eInstruction Classroom Performance Systems to the high school mathematics department and make one system available for each grade at the middle school. Computer labs at both buildings will be dedicated to the mathematics department to ensure that each math teacher has one full day each week in the computer lab. Mobile carts will also be available for check out to be used in the classrooms as needed. The Mobi system requires little set up so there would be no question that teachers would be ready to utilize digital curriculum on the first day of school.

Implementation Plan – Online Assessments: Describe each school's capacity and commitment to administer online ISTEP+ and ECA assessments, as well as Acuity Assessments, both with and without additional lab space that grant funds could provide. Describe how teachers will ensure that students are trained on how to properly complete online assessments.

Over the last few years, we have added computer labs to both the middle and high schools. This summer, the middle school will be adding an additional lab and the high school will be purchasing 2 mobile lap carts. We currently administer all ECA assessments online and have piloted the ISTEP online successfully in the fifth grade. This is our third year with using Acuity so our students are familiar with online assessments as well as the instructional resources that accompany them. New



this year, our high school utilized USA Test Prep to administer online benchmarks for Algebra I. Prior to each ISTEP and ECA Assessments, all teachers administer and discuss the practice tests to make sure all students understand how to complete the online assessments. Utilizing our experience with the online ISTEP administration at one of our elementary schools, we will have mathematic teachers use their multimedia presentation stations to provide group instruction on what students will see as well as provide individual practice in the labs. Our corporation has the sufficient band width and computers to accomplish the online ISTEP administration at the middle school. Teachers, administrators, and technology staff at the middle school, high school, and central office are committed to administering ISTEP and ECA assessments online.

IV. BUDGET

See program overview for allowable costs. List each expenditure on a separate line.

Expenditures Budget (Use a separate line for each expenditure, and add rows as needed)				
Expenditure Description	Person Responsible	Cost per Unit	Number of Units	COST
Digital curriculum subscriptions (list vendor) ALEKS	Mary Harper, Asst. Superintendent	\$28.00 ALEKS per student	1175	\$32,900
Professional development reimbursements	Mary Harper, Asst. Superintendent	\$100 stipends to attend ALEKS Training (ALEKS PD-free)	14	*\$1,400 (*Total PD \$250 per teacher)
Professional development reimbursements	Mary Harper, Asst. Superintendent	\$500 Half Day Mobi Training	1	*\$500
Professional development reimbursements	Mary Harper, Asst. Superintendent	\$100 stipends to attend Mobi training	14	*\$1,400
Professional Development	Mary Harper, Asst. Superintendent	\$15 <i>How to Use the Mobi System in the Classroom</i> , book	14	*\$210
Interactive whiteboard (list make and model number) eInstruction Interwrite Mobi System - includes one Mobi, two Mobi Learners, one Mobi Dock, and workspace components: Mobi Teacher CB-A-MOB001-001, Mobi Learner CB-A-MOB002-001 (qty 2) and Mobi Dock CB-A-MOB500-0001	Chuck Bujarsky, Technology Director	\$1,145 includes Mobi System, two Mobi Learners, one Dock, and workspace	13	*\$14,885 *Total teacher Mobi System \$2,340 each
Interactive whiteboard (list make and model number) eInstruction Mobi Learner CB-A-84000489-01-R	Chuck Bujarsky, Technology Director	\$345 Interwrite Mobi Learner includes rechargeable pen, USB Cable, Receiver, and Interwrite Workspace Software	39 (3 for each teacher)	*\$13,455
Interactive whiteboard (list make and model number) eInstruction Mobi Accessories CB-A-84-00489-01-R	Chuck Bujarsky, Technology Director	\$160 Interwrite Mobi Dock	13	*\$2,080
Acuity Algebra set-up fee	Mary Harper, Asst. Superintendent	No Cost		\$0
Cost for Acuity Algebra administration (per student)	Mary Harper, Asst. Superintendent	\$2.00 per student for Acuity Algebra I (already using Acuity-just adding students)	308	\$616
Costs related to online assessment	Chuck Bujarsky, Technology Director	\$350 Computer (Local match)	30	\$10,500
Total Funds Requested				\$77,946

LOCAL SHARE*

*This is not a requirement for the grant, but it will help us to determine the additional resources need at the local level.

Expenditures Budget
(Use a separate line for each expenditure, and add rows as needed)

<u>Expenditure Description</u>	<u>Person Responsible</u>	<u>Cost per Unit</u>	<u>Number of Units</u>	<u>COST</u>
Costs related to online assessment	Chuck Bujarsky, Technology Director	\$350 Cables and Wiring Hardware	Packaged	\$350
Costs related to online assessment	Chuck Bujarsky, Technology Director	\$250 Network Cabinet	1	\$250
Costs related to online assessment	Chuck Bujarsky, Technology Director	\$75 Office Productivity Package	75	\$2,250
Costs related to online assessment	Chuck Bujarsky, Technology Director	\$2,300 Switch for Network Connectivity	1	\$2,300
Costs related to online assessment	Denny Ramsey, SMS Principals	\$200 Computer Table and Chair	30	\$6,000
Costs related to online assessment	Chuck Bujarsky, Technology Director Tom Zobel, SHS Principal	\$26,000 Mobile Cart	2	\$52,000
Professional Development	Mary Harper, Asst. Superintendent	\$35 Half day subs to provide ongoing coaching for ALEKS \$0 (In-service costs and stipends covered through a grant)	56	\$1,960
Professional Development	Mary Harper, Asst. Superintendent	No additional cost	14	\$0
Additional lab set up		No cost		\$0
Additional Costs for Interactive Whiteboard (e.g. installation materials)			Total Local Share	\$65,110
Total Funds Requested				\$77,946



V. ASSURANCES

By checking each box below, you agree to the following assurances:

- ☒ The LEA assures that Acuity online assessments will be administered to assess student growth during the grant period (e.g. Acuity Predictive or Pre/Post Test; the exact assessments will be determined by the DOE, but will not exceed 3 tests during the school year, excluding ISTEP+ and ECA).
- ☒ The LEA assures that, given favorable results on a statewide level, it will give serious consideration to sustained use of digital curricula in all schools in the LEA until the next textbook adoption cycle (2016-17 school year).
- ☒ The LEA assures that the selected digital curriculum will be implemented, with fidelity, as the core curriculum for all mathematics classrooms (6th Grade, 7th Grade, 8th Grade, and/or Algebra I) at each school that receives grant funds, for the duration of the school year. "With fidelity" implies that districts will take the steps necessary to implement the digital curriculum as outlined by the vendor.
- ☒ The LEA assures that teachers will be provided with professional development necessary to implement digital curriculum with fidelity. Professional development includes, but is not limited to, training on digital curriculum software, integrating interactive whiteboards into a standards-based classroom, and using Acuity assessments to guide instruction.
- ☒ The LEA assures that funds used for interactive whiteboards will remain in mathematics teacher classrooms for the duration of the program. Any realignment of current inventory for these purposes will also remain in effect for the duration.
- ☒ The LEA assures that all 7th and 8th grade students in Algebra I will take the Algebra ECA online.
- ☒ The LEA assures that all students will take the ISTEP+ online, unless the school can demonstrate an inability to test all students online.
- ☒ The LEA assures that all teachers that use digital curriculum will participate in an *anonymous* evaluation of the program to determine its ability to impact teaching methods.
- ☒ The LEA assures that classrooms in which digital curriculum is being used will be available for observation by certain members of the Department of Education, with reasonable notification, to provide for a qualitative analysis of program effectiveness.
- ☒ The LEA assures that all students will complete a survey regarding the effectiveness of the digital curriculum.
- ☒ The LEA assures that all hardware and software implementations will be put in place before the start of the 2010-11 school year and that professional development related to this program will begin before the start of the 2010-11 school year.
- ☒ The LEA agrees to keep such records and to provide such information to the State educational agency, as may be reasonably required for fiscal audit and program evaluation (consistent with the responsibilities of the State educational agency under this part).

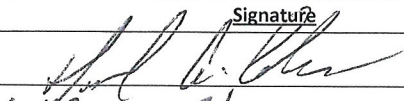
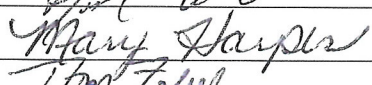
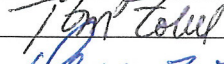
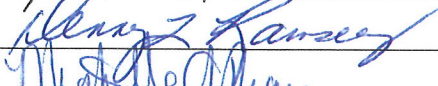



VI. SIGNATURES

List the management team of this grant for each school. Each member of the management team should also sign below. Complete this sheet for *each* school that is included in the district's implementation plan.

School Name:

Grade Levels:

<u>NAME</u>	<u>POSITION</u>	<u>Signature</u>
1. David A. Adams	Superintendent, Shelbyville Central Schools	
2. Mary Harper	District Math and Assessment Coordinator	
3. Tom Zobel	Shelbyville High School Principal	
4. Denny Ramsey	Shelbyville Middle School Principal	
5. Michelle Phares	High School Math Department Chair	
6. Kevin England	Middle School Math Department Chair	